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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/809,535  | 03/24/2004  | Francis J. Kelley    | 02009US             | 6145             |
| 61611   | 7590        | 07/19/2006           | EXAMINER            |                  |
| ROHM AND HAAS ELECTRONIC MATERIALS<br>CMP HOLDINGS, INC.<br>451 BELLEVUE ROAD<br>NEWARK, DE 19713 |             |                      | CHEN, KIN CHAN      |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 1765                |                  |

DATE MAILED: 07/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                               |  |
|------------------------------|-------------------------------|-------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/809,535 | Applicant(s)<br>KELLEY ET AL. |  |
|                              | Examiner<br>Kin-Chan Chen     | Art Unit<br>1765              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 6-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12222004</u>  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of claims 1-5 on June 13, 2006 is acknowledged.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Machii et al. (US 2004/0065022).

Machii teaches an aqueous composition useful for polishing copper on a semiconductor wafer. The composition may comprise oxidizer, inhibitor for a nonferrous metal, complexing agent for nonferrous metal, modified cellulose (e.g., carboxy methyl cellulose) and balance water. The composition may be free of polyacrylic acids. The composition may comprise 0.01 to 10 weight percent abrasive. See [0004], [0037], [0051], [0064], [0066], [0069], [0076],[0095].

Claim 1 differs from Machii by specifying various amount of each additive.

However, It would have been obvious to one with ordinary skilled in the art to employ these components in combination for their known functions and optimize the amount of each additive. MPEP 2144.06.

Dependant claim 4 differs from the prior art by specifying various degree of substitution and molecular weight of carboxy methyl cellulose. Because same are merely a matter of choices of design depending on the product requirements, in absence of any unexpected result which is different in kind and not merely in degree from the result of the prior art, it would be obvious to one skilled in the art to use various a degree of substitution and molecular weight of carboxy methyl cellulose in order to accommodate the specific product and meet the product requirement.

4. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kodama et al. (US 6,027,554) in view of Watts et al. (US 5,897,375).

Kodama teaches an aqueous composition useful for polishing copper on a semiconductor wafer. The composition may comprise complexing agent for nonferrous metal, modified cellulose (e.g., carboxy methyl cellulose) and balance water. The composition may be free of polyacrylic acids. The composition may comprise 0.01 to 10 weight percent abrasive. See col. 1, lines 48-50; col. 4, lines 57-60; col. 5, lines 55-60; col. 6, lines 37-54.

The claimed invention differs from Kodama by specifying well-known oxidizer and inhibitor used in the slurry for copper polishing. In the method and composition for

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copper polishing. Watts teaches that oxidizer and inhibitor may be used in the in the slurry for copper polishing (see abstract; col. 5, lines 7-15). Hence, it would have been obvious to one with ordinary skill in the art to incorporate oxidizer and inhibitor of Watts into the slurry composition of Kodama in order to efficiently polish copper.

Claim 1 differs from Kodama and Watts by specifying various amount of modified cellulose. However, It would have been obvious to one with ordinary skilled in the art to use it for its known functions and optimize the amount of it. MPEP 2144.06.

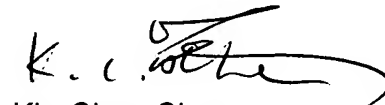
Dependant claim 4 differs from the prior art by specifying various degree of substitution and molecular weight of carboxy methyl cellulose. Because same are merely a matter of choices of design depending on the product requirements, in absence of any unexpected result which is different in kind and not merely in degree from the result of the prior art, it would be obvious to one skilled in the art to use various a degree of substitution and molecular weight of carboxy methyl cellulose in order to accommodate the specific product and meet the product requirement.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kin-Chan Chen whose telephone number is (571) 272-1461. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published

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applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 14, 2006



Kin-Chan Chen  
Primary Examiner  
Art Unit 1765